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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,094	12/17/2001	Xuemei Ouyang	US 010665	2441

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EXAMINER

MOORE JR, MICHAEL J

ART UNIT PAPER NUMBER

2616

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/023,094

Applicant(s)

OUYANG ET AL.

Examiner

Michael J. Moore, Jr.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-19 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-15 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6, 7, 16-19 and 24-26 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 8 and 21-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/22/06 has been entered.

Claim Objections

Amendments made by Applicant to obviate the objection of claim **21** of the previous Office Action are proper and have been entered. This objection has been withdrawn.

Claim Rejections - 35 USC § 112

Amendments made by Applicant to obviate the rejections of claims **16 and 21** under 35 U.S.C. § 112 2nd paragraph of the previous Office Action are proper and have been entered. These rejections have been withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims **1, 4, 6, 7, and 16-19** are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (U.S. 6,882,660) (hereinafter "Lee"). Lee teaches all of the limitations of the specified claims with the reasoning that follows.

Regarding claim **1**, "receiving a transmission of the data packet to obtain a received packet" is anticipated by radio frequency (RF) unit 210 of Figure 2 that receives radio data (received packet) as spoken of on column 4, lines 36-37.

"Demodulating the received packet to be stored in a first storage medium" is anticipated by demodulation unit 222 of Figure 2 that demodulates the radio data (received packet) supplied from buffer 221 and transmits the demodulated data to data reception/analysis unit 231 (first storage medium) as spoken of on column 4, lines 48-51.

"Determining whether the received packet is a retransmitted packet according to at least one predetermined criterion" is anticipated by layer 1 220 of Figure 2 that determines whether normal or repeated (retransmission) data transmission was performed based upon transmission information (predetermined criterion) as spoken of on column 7, lines 44-55.

Lastly, "if so, combining the received packet with a previous packet stored in a second storage medium using a maximum ratio combining method" is anticipated by layer 1 220 of Figure 2 that restores/combines the received data repeatedly predetermined times using a maximal ratio combining (MRC) process as spoken of on column 8, lines 1-10.

Regarding claim 4, "wherein the combining the received packet with the previous packet is performed according to a signal-to-noise ratio (SNR) symbol of the received packet and the previous packet" is anticipated by the repeated transmission based upon signal-to-noise ratio as spoken of on column 7, lines 21-26.

Regarding claim 6, "wherein the combining the received packet with the stored packet is performed in an access point (AP) is anticipated by the apparatus shown in Figure 2.

Regarding claim 7, "wherein the combining the received packet with the previous packet is performed in a mobile station in communication with the AP" is anticipated by the apparatus shown in Figure 2.

Regarding claim 16, "an apparatus for combining a data packet in a communication system" is anticipated by the apparatus shown in Figure 2.

"A demodulator for demodulating a transmission of the data packet to obtain a received packet" is anticipated by demodulation unit 222 (demodulator) that demodulates the radio data (received packet) supplied from buffer 221 as spoken of on column 4, lines 48-51.

"A first storage for storing the received packet" is anticipated by reception/analysis unit 231 (first storage) of Figure 2 that receives demodulated data from demodulation unit 222 as spoken of on column 4, lines 48-51.

"A second storage for storing a previous packet with error" is anticipated by upper layer 230 (second storage) of Figure 2 that receives erroneous data from layer 1 220 as spoken of on column 8, lines 1-5.

“A processor for determining whether the received packet is a retransmitted packet in response to the previous packet according to at least one predetermined criterion” is anticipated by layer 1 220 (processor) of Figure 2 that determines whether normal or repeated (retransmission) data transmission was performed based upon transmission information (predetermined criterion) as spoken of on column 7, lines 44-55.

Lastly, “an adder for adding the received packet with the previous packet when the at least one predetermined criterion is satisfied” is anticipated by layer 1 220 (adder) of Figure 2 that restores/combines the received data repeatedly predetermined times using a maximal ratio combining (MRC) process as spoken of on column 8, lines 1-10.

Regarding claim 17, “at least one antenna for receiving the transmission of the data packet and the previous packet” is anticipated by radio frequency (RF) unit 210 (antenna) of Figure 2 that receives radio data as spoken of on column 4, lines 36-37.

Regarding claim 18, “wherein the adder uses a maximum ratio combining method” is anticipated by layer 1 220 (adder) of Figure 2 that restores/combines the received data repeatedly predetermined times using a maximal ratio combining (MRC) process as spoken of on column 8, lines 1-10.

Regarding claim 19, “wherein the maximum ratio combining method is performed according to a signal-to-noise ratio (SNR) symbol of the received packet and the previous packet” is anticipated by the repeated transmission based upon signal-to-noise ratio as spoken of on column 7, lines 21-26.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims **24-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. 6,882,660) (hereinafter "Lee") in view of Malkamaki (U.S. 2002/0172208).

Regarding claim **24**, Lee teaches the apparatus of claim **16**.

Lee does not teach where the processor determines that the received packet is a retransmitted packet when corresponding sequence control fields of the received packet and the previous packet are the same.

However, *Malkamaki* teaches a hybrid ARQ scheme where sequence numbers of data blocks are compared to determine whether a particular data block is a retransmitted data block as spoken of on page 4, paragraph 36, lines 10-26.

These references are considered to be analogous art in that they are both concerned with data recovery using ARQ.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the sequence number comparison teachings of *Malkamaki* with the retransmission method of *Lee* in order to provide additional criteria for detecting retransmitted data.

Regarding claims **25 and 26**, *Lee* teaches the method of claim **1** and the apparatus of claim **16**, respectively.

Lee does not teach where the at least one predetermined criterion is based on corresponding medium access control (MAC) frames of the received packet and the previous packet.

However, *Malkamaki* teaches a hybrid ARQ scheme where sequence numbers of data blocks are compared to determine whether a particular data block is a retransmitted data block (corresponds to another data block) as spoken of on page 4, paragraph 36, lines 10-26.

These references are considered to be analogous art in that they are both concerned with data recovery using ARQ.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the sequence number comparison teachings of *Malkamaki* with the retransmission method of *Lee* in order to provide additional criteria for detecting retransmitted data.

Allowable Subject Matter

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7. Claims **9-15** are allowable over the prior art of record.
8. Claims **2, 3, 8, and 21-23** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim **2**, *Lee* teaches the method of claim **1**. *Lee* as well as the other prior art of record fail to teach determining whether the received packet is a retransmitted packet by: determining whether corresponding length fields of the received and previous packet are the same, determining whether a retry bit field of the received packet is activated when the corresponding length fields are the same, and determining whether the corresponding sequence control fields of the received packet and previous packet are the same when the retry bit field is activated.

Regarding claim **3**, *Lee* teaches the method of claim **1**. *Lee* as well as the other prior art of record fail to teach determining whether the received packet is a retransmitted packet by determining whether corresponding address fields of the received packet and the previous packet are the same.

Regarding claim **8**, *Lee* teaches the method of claim **1**. *Lee* as well as the other prior art of record fail to teach determining whether the received packet is a retransmitted packet by: determining whether corresponding length fields of the received and previous packet are the same, determining whether a retry bit field of the received packet is activated when the corresponding length fields are the same,

determining whether corresponding address fields of the received packet and the previous packet are the same when the retry bit field of the received packet is activated, and determining whether corresponding sequence control fields of the received and previous packet are the same when the address field of the received packet and previous packet are the same.

Regarding claim **9**, *Lee* teaches the maximum ratio combining method as described above with regard to claim **1**. *Lee* as well as the other prior art of record fail to teach extracting a physical layer convergence protocol (PLCP) and MAC header from the received packet, and comparing corresponding PLCP and MAC headers of the received packet and a previously received packet with error stored in a second storage medium to determine whether the received packet is a retransmitted packet.

Regarding claims **10-15**, these claims are further limiting to claim **9** and are thus also allowable over the prior art of record.

Regarding claim **21**, *Lee* teaches the apparatus of claim **16**. *Lee* as well as the other prior art of record fail to teach determining that the received packet is a retransmitted packet when corresponding length fields of the received packet and the previous packet are the same.

Regarding claim **22**, *Lee* teaches the apparatus of claim **16**. *Lee* as well as the other prior art of record fail to teach determining that the received packet is a retransmitted packet when a retry bit field of the received packet is activated.

Regarding claim **23**, *Lee* teaches the apparatus of claim **16**. *Lee* as well as the other prior art of record fail to teach determining that the received packet is a

retransmitted packet when corresponding address fields of the received packet and the previous packet are the same.

Response to Arguments

10. Applicant's arguments with respect to claims **1-4, 6-19, and 21-24** have been considered but are moot in view of the new ground(s) of rejection provided above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (8:00am - 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

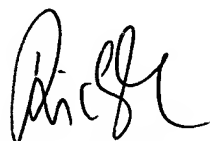
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

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Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael J. Moore, Jr.
Examiner
Art Unit 2616

mjm MM



RICKY Q. NGO
SUPERVISORY PATENT EXAMINER